

LIST OF CURRENT CLAIMS

1-14 (Canceled).

15. (New) Device to determine the road followed by a person on foot, comprising at least three inertia sensors attached to the body of a person, one of said sensors attached to the torso and one of said sensors attached to each leg respectively, and wherein said sensors are arranged to measure the absolute orientation of the part of the body to which they are attached; means which make it possible to determine the instant at which the person takes a step; an arithmetic unit to which the sensors and the means which make it possible to determine the instant at which the person takes a step are connected, said arithmetic unit comprising a first algorithm which enables, on the basis of a number of body dimensions of the person concerned and on the basis of the signals coming from the at least three sensors, a determination to be made of at least the step distance for every step taken by the person as well as the cumulative step distance from a defined starting point.

16. (New) Device according to claim 15, wherein the algorithm enables the determination of the direction of every step, as well as the route followed by the person from the defined starting point.

17. (New) Device according to claim 15, wherein the inertia sensors attached to the legs are located on the upper legs.

18. (New) Device according to claim 15, wherein the inertia sensors attached to the legs are located on the lower legs.

19. (New) Device according to claim 15, wherein said at least three inertia sensors include inertia sensors attached to both the upper legs and the lower legs.

20. (New) Device according to claim 15, including one or several garments which fit tightly onto the torso and onto the legs of the person and wherein said inertia sensors are attached to said garments.

21. (New) Device according to claim 15, including an electric power supply for the sensors and for the arithmetic unit, which power supply is carriable by the person.

22. (New) Device according to claim 15, wherein the inertia sensors include at least two gyroscopes which are oriented according to mutual directions, at least one magnetometer and at least one accelerometer.

23. (New) Device according to claim 22, including a microprocessor, and wherein each of the sensors is integrated with the microprocessor.

24. (New) Device according to claim 23, including a software filter of the Kalman type arranged to correct for the drift of the gyroscopes by comparing the signals of the gyroscopes with the signals of the magnetometers and accelerometers.

25. (New) Device according to claim 15, wherein the means which make it possible to determine the instant at which the person takes a step comprises a second algorithm in the arithmetic unit which makes it possible, on the basis of the signals of the accelerometers of the inertia sensors, to determine when the person is situated with both feet on the ground.

26. (New) Device according to claim 15, including a positioning system which is coupled to the arithmetic unit.

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27. (New) Device according to claim 15, including means to establish a wireless connection with a communication network.

28. (New) Device according to claim 15, including a connection enabling communication with a computer.